SOLID WASTE COMMERCIAL COLLECTION SYSTEM ANALYSIS

prepared for

City of Helena, Montana

FINAL REPORT

April, 1986

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April 14, 1986

Mr. William Verwolf, City Manager
City of Helena
316 North Park
Helena, MT 59623

Re: Commercial Refuse Collection Analysis

Dear Mr. Verwolf:

We are herewith submitting the final report for the Commercial Refuse Collection System Analysis that our firm prepared for the City. We have incorporated the review comments on the draft report that were recently submitted to us by Mark Weston. A summary of the project's findings and conclusions is included in Part One of this report. The description and detailed analyses of the various alternatives are included in Part Three.

We are pleased for the opportunity to provide this analysis to the City of Helena. If you desire, we would be most happy to present the findings of this final report to the appropriate City officials. If you have any questions or comments, please call at your earliest convenience.

Very truly yours,

DAMSCHEN & ASSOCIATES

Barry E. Damschen, P.E.

BD/gp
Encl.

SOLID WASTE

COMMERCIAL COLLECTION SYSTEM ANALYSIS

FOR

CITY OF HELENA, MONTANA

FINAL REPORT

APRIL, 1986

Prepared By:

Damschen & Associates
Helena, Montana

Lewis & Clark Library
120 S. Last Chance Mall
Helena, Montana 59601

TABLE OF CONTENTS

		Page
PART ONE: SUMMARY		
I.	Background	1
II.	Conclusions	2
III.	Recommendations	3
PART TWO: EXISTING CONDITIONS		
I.	Existing Waste Management Conditions	4
II.	Solid Waste Quantities	6
PART THREE: EVALUATION OF ALTERNATIVES		
I.	General	8
II.	Discussion of Alternatives	9
III.	Economic Cost Analysis	13
PART FOUR: RECOMMENDATIONS		
I.	General Summary	19
II.	Recommendations	20

LIST OF TABLES

		Page
1.	Solid Waste Quantities	7
2.	Commercial Collection System Account Summary	9
3.	Fiscal 1986 Sanitation Budget	14
4.	Alternatives Analysis Capital Costs	16
5.	Alternatives Analysis Annual Costs	17
6.	Salvage Value of Existing System	18

LIST OF FIGURES

		Following Page
1.	Waste Quantity Seasonal Variation	6

PART ONE

SUMMARY

PART ONE

SUMMARY

I. BACKGROUND

Currently the City of Helena Sanitation Department operates a solid waste collection service for the waste generated within the city. The residential wastes are collected using a mechanized side-loading system which employs one driver per vehicle. The wastes generated by the commercial establishments are collected using a rear-loading system which employs two-man crews. All wastes collected within the city are disposed of at the City of Helena's sanitary landfill located within the city limits just northeast of Carroll College.

By ordinance, all residential units within the City of Helena are assessed a fee for the residential collection services. Payment of this fee also gives each resident the opportunity to haul their waste individually to the city's landfill for no additional charge. Unlike the residential system, however, the commercial establishments are not required to utilize the city's collection service. The commercial establishments have the right to use the City commercial refuse collection system, contract with City-County Sanitation Service (a private commercial refuse hauler) or haul their own wastes to the City of Helena landfill. According to City officials, it is estimated that approximately 80 percent of the commercial establishments in Helena currently utilize the City's commercial collection service.

For the past two years, City of Helena officials have contemplated alternatives to the rear-loading commercial collection system including the feasibility of utilizing a mechanized front-loading commercial collection system. The front-loading system is less labor-intensive than the rear-loading system; however, the front-loading system is more capital-intensive due to the higher capital costs of the packer vehicles. A third option that City officials considered is the elimination of the commercial collection service, thereby turning over the City's existing commercial accounts to a private collection service(s).

In order to evaluate the various options that have been identified for handling the wastes generated by commercial establishments in Helena, the City of Helena retained the consulting engineering firm of Damschen & Associates to conduct a feasibility study. The various work elements that were deemed appropriate and included in the study are as follows:

A. Review the existing commercial sanitation service and summarize current manpower, equipment, routes, and costs of service.

B. Become familiar with the existing collection routes and special service constraints within the City.

C. Prepare a cost analysis comparing the capital and annual costs and impact on the Sanitation Department's total annual budget and rates for various potential alternatives.

D. Address potential impacts and problems related to possible changes in the collection system.

E. Compile the information into a draft report for review by the City staff and Commission.

F. Incorporate comments and revisions into a final report.

II. CONCLUSIONS

The Consultant's analysis of the three commercial collection alternatives deemed appropriate emphasized the following: 1) compatibility with the existing conditions; 2) life-cycle cost estimates; and 3) legal and political constraints and impacts. Based on the analysis conducted herein, the following conclusions were formulated:

A. The existing commercial rear-loading system appears to be operating in an efficient and organized manner.

B. Approximately 50 percent of the existing containers are in poor condition or need to be repaired or replaced. The three existing packer trucks are in good condition and are well maintained.

C. The existing commercial collection budget of $276,600 does not include a replacement fund for vehicles or containers.

D. The replacement of the existing rear-loading system with a new front-loading system would have the following impacts:

1. Reduce the existing collection personnel needs by 2½ people.

2. Require a capital investment of approximately $396,000 ($152,000 for containers and $244,000 for two new and one used front-loading packers). This cost could be reduced by approximately $126,000 through the sale or trade of the existing rear-loading equipment and containers.

3. Based on a life-cycle cost analysis, the front-loading system would cost $274,000 per year compared to $324,000 for the existing rear-loading system. This estimate takes into

account labor, maintenance and operation, depreciation of vehicles and containers, and "tramp truck" expenses. This annual cost analysis also reflects an estimated $11,000 per year loss of revenue for the front-loading system due to physical constraints and traffic problems that may prohibit the servicing of approximately four percent of the existing commercial accounts.

E. If the City were to discontinue providing a commercial collection system, the following impacts would become evident:

1. Residential collection and sanitary landfilling service rates would have to be increased by approximately ten percent to compensate for the $59,000 in annual fixed costs that are currently being assessed to commercial accounts.

2. Due to Montana statutes and the corresponding limitations on PSC refuse hauling permits, the elimination of the City's commercial system could possibly create a monopoly situation for refuse collection within the City. Such a situation could ultimately increase commercial refuse collection rates.

III. RECOMMENDATIONS

A. It is the Consultant's recommendation that the City replace the existing rear-loading system with a new front-loading system. Once the new system has been placed into operation and is operating smoothly, the City should sell or trade-in the existing packer trucks and containers. The City may want to consider, however, keeping one of the rear-loading packer trucks and approximately 30 existing containers to serve the few existing accounts (4% of total revenue) that cannot be converted to the front-loading system due to physical or traffic constraints. This option compared to discontinuing service to these accounts should be evaluated in more detail during the start-up phase of the new system.

B. It is recommended that the City should not consider the discontinuation of commercial collection service at this time. This option should be periodically re-evaluated, however.

C. It is recommended that a detailed analysis of the current rate structure be conducted once the new front-loading system is implemented.

PART TWO

EXISTING CONDITIONS

PART TWO

EXISTING CONDITIONS

I. EXISTING WASTE MANAGEMENT CONDITIONS

The management of solid waste in the City of Helena is the responsibility of the City's Sanitation Department. The department has 13-1/3 full-time employees. The overall responsibility of the department is through the Director of Public Works. The Department is managed by the City's environmental engineer and sanitation foreman.

The City of Helena's Sanitation Department provides four primary services. These include:

a. providing residential collection service to all residential units within the city;

b. providing commercial collection service to commercial establishments within the city that desire the service;

c. providing a bulky materials (tramp truck) pickup service to all residential and contracted commercial accounts; and

d. providing and operating a sanitary landfill to dispose of the wastes brought to the site.

Summarized in the following paragraphs is a brief synopsis of the existing services, facilities, and equipment provided by the City of Helena Sanitation Department.

A. Residential Collection Service

In 1983 the City of Helena converted its residential collection service from a rear- and side-loading system requiring two operators per vehicle to a one-man per vehicle mechanized system. The system currently utilizes three 24-cubic-yard side-loading mechanized Heil collection vehicles, one of which is considered a standby vehicle. The system utilizes approximately 1,960 300-gallon plastic containers and 2,780 90-gallon plastic containers. The City provides these containers to residents; the cost of the containers is included in residential annual assessments. The larger containers are generally placed in areas with alleys where three households typically share a container. The smaller containers are used primarily in areas without alleys, and serve individual households. Residents in these areas are responsible for rolling the container to the curb on pickup days. All containers are emptied

once per week. Currently the City of Helena has approximately 7,500 residential accounts.

B. Commercial Collection Service

The City of Helena currently has approximately 420 commercial accounts for refuse collection. This service utilizes three 20-cubic-yard rear-loading packer trucks, two of which are used full-time and one which serves as a standby vehicle. The City provides metal containers varying in size from one to eight cubic yards to most of the commercial establishments. The commercial collection service is available from one to six days per week, depending upon the degree of service required.

In addition to the commercial accounts that utilize the rear-loading system, there are approximately 75 commercial establishments in the city that are served by the same mechanized system that services the residential customers. These commercial accounts were converted to the residential system in 1983, when the side-loading residential mechanized system was implemented. These accounts are located primarily in areas of the City where the mechanized unit can conveniently and economically service the containers, and where waste volumes are small. For this analysis, it was assumed that these accounts would continue to be serviced in this manner, regardless of the conclusions of this study.

C. Bulky Materials Collection Service (Tramp Truck)

In December 1985, the City of Helena purchased a new dump truck chassis and equipped it with a low-profile flat-bed box to be used to pick up bulky materials that are difficult or impossible to handle with the mechanized or rear-loading packer trucks. This vehicle is commonly referred to as the "tramp truck" and is intended to serve both residential and commercial customers within the city. The tramp truck is dispatched by radio by the drivers of the packer trucks as well as the central dispatch office that handles calls from residential and commercial customers. As time permits, the tramp truck operator also performs periodic surveillance trips through alleys, collecting large bulky materials. In most instances, the tramp truck is operated by one person. The tramp truck operator also repairs the plastic containers as needed.

D. Sanitary Landfill

The City of Helena operates a sanitary landfill located east of the Carroll College PE facility. This site is leased from the Burlington Northern railroad, and is open six days per week from 8:00 a.m. to 5:00 p.m. A scale attendant, compaction equipment operator, and loader operator are generally on duty when the site is open. According to recent estimates from City officials, the site has sufficient capacity to handle area wastes for at least five more years.

II. SOLID WASTE QUANTITIES

The City of Helena records all solid waste quantities brought to the city's sanitary landfill using a scale located at the landfill entrance. All vehicles are required to stop for weighing upon entering and leaving the landfill. The City of Helena's landfill is currently the only landfill in Montana weighing and recording all wastes.

The wastes brought to the landfill are categorized and recorded according to generation source. Summarized in Table 1 is a breakdown of the quantities of waste brought to the City's landfill in 1985 by generation source. As indicated, 29,610 tons of waste were deposited at the landfill, of which 17,187 tons (58%) were brought in by City sanitation crews. Further review indicates that 7,364 tons (25%) of the total wastes deposited were collected by the City's commercial crews.

The seasonal fluctuation of the wastes deposited at the landfill in 1985 by generation source is graphically depicted on Figure 1. This figure indicates the generally increased generation of waste during the spring and summer months compared to the winter months. This is typical of most communities in Montana due to the general yard cleanup that is seasonal in nature. It should, however, be noted that the wastes collected by the commercial collection crews fluctuate less during the year than wastes from other generation sources.

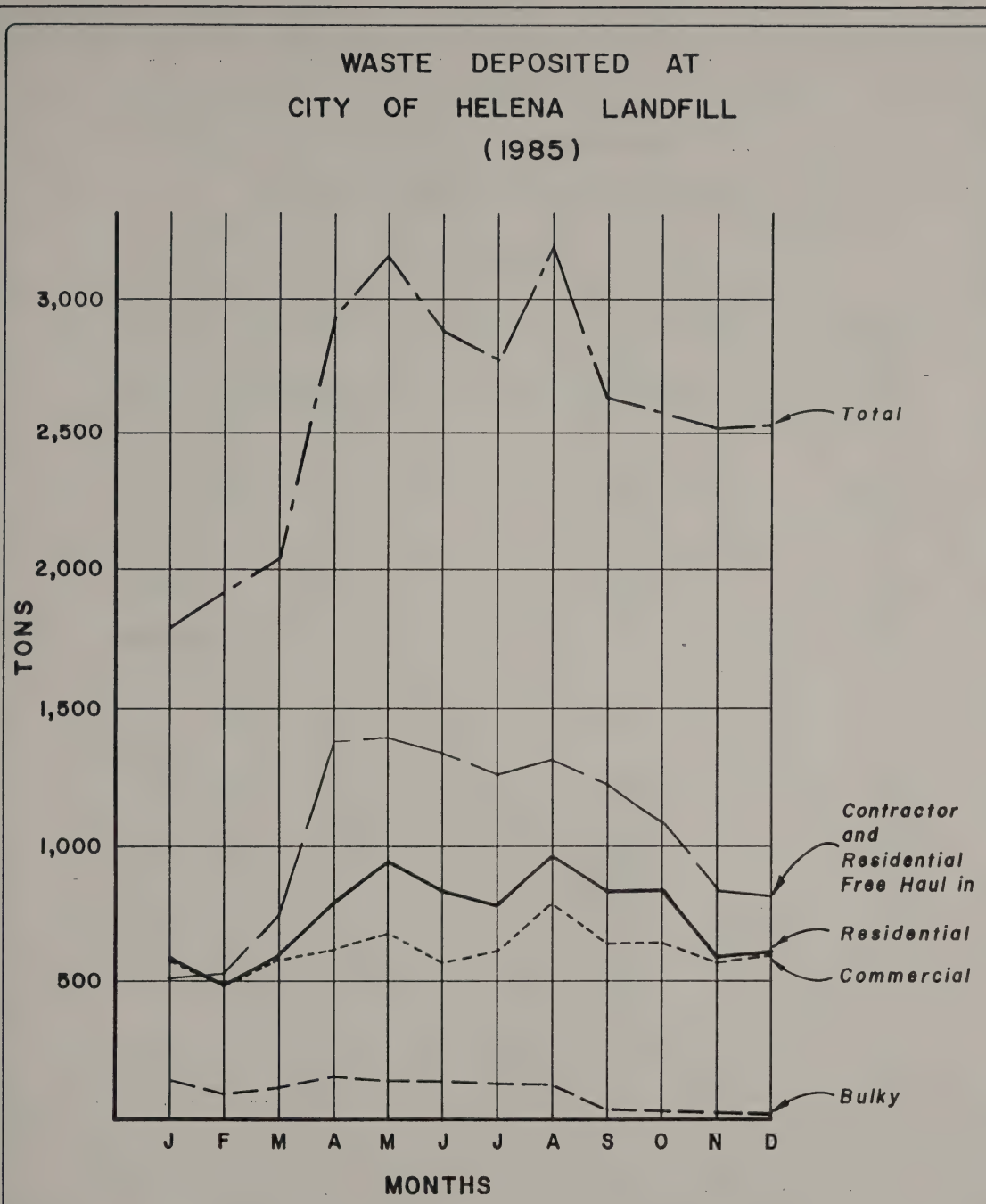
WASTE DEPOSITED AT
CITY OF HELENA LANDFILL
(1985)
3,000
2,500
2,000
1,500
1,000
500
TONS
Total
Contractor and Residential Free Haul in
Residential
Commercial
Bulky
J F M A M J J A S O N D
MONTHS

Figure 1

TABLE 1

SOLID WASTE QUANTITIES

DEPOSITED AT CITY OF HELENA LANDFILL

(1985)

Generation Source	Annual Tonnage	% of Total
City of Helena Crews:		
Residential	8,743	29.5
Commercial	7,364	24.9
Bulky	1,080	3.6
Subtotal:	17,187	58.0
Other:		
Individuals	5,718	19.3
Contractors	6,705	22.7
Subtotal:	12,423	42.0
TOTAL:	29,610	100.0

PART THREE

EVALUATION OF ALTERNATIVES

PART THREE

EVALUATION OF ALTERNATIVES

I. GENERAL

Based on the evaluation of the existing conditions of the City of Helena's commercial collection system coupled with several meetings held with Public Works and Sanitation Department personnel, three alternatives were deemed appropriate for evaluation. These alternatives are:

a. Continued use of the existing rear-loading system;

b. Replacement of the existing system with a new front-loading system; and

c. Discontinuance of the City's commercial collection service.

To conduct this analysis, the Consultant initially reviewed all information that was made available by the City concerning the existing system. Information that was provided to the Consultant included: collection route summaries identifying name, location, route sequence, container size, and frequency of collection for all users; existing costs and budgets for the Sanitation Department for the previous three years as well as the proposed fiscal 1986 budget; personnel and staffing requirements of the Sanitation Department; and replacement schedules for existing equipment.

After reviewing this information, the Consultant conducted field studies of the existing system. This field work included accompanying the drivers of the collection vehicles to discuss the system, and field-checking each pickup location. In addition, the Consultant conducted several meetings with the City's Public Works Director, Environmental Engineer, and Sanitation Department Foreman during this period.

After the field studies were completed and the Consultant had a good understanding of the existing system, three primary alternatives were evaluated. This evaluation emphasized the following: 1) compatibility with existing conditions; 2) life-cycle costs; and 3) legal and political constraints and impacts. Included in the following text is a summary of these analyses.

II. DISCUSSION OF ALTERNATIVES

A. Continuation of Existing System

Currently the City of Helena's commercial collection system has approximately 420 active accounts. This represents approximately 80 percent of the commercial businesses in the City of Helena. Most of the remaining commercial businesses and the Capitol Complex are served by City-County Sanitation Service, a private refuse hauler that provides refuse services in the Helena area.

With the exception of a few accounts, the commercial containers are collected at least once per week with the average frequency of collection being 2.9 pickups per week per account. The City offers its commercial accounts up to six-day per week service. With the exception of 29 customers that leave their bagged refuse near their business entrances, the City provides metal containers for commercial use. In some instances, more than one business shares a container. Included in Table 2 is a summary of the number of accounts and the corresponding storage and frequency of pickup data.

TABLE 2

CITY OF HELENA COMMERCIAL COLLECTION SYSTEM

ACCOUNT SUMMARY

Total Storage Provided (cy)	Number of Accounts	Total Pickups Per Week
Loose	29	84
1	19	31
2	145	320
3	140	343
4	21	49
5	2	4
6	19	63
7	2	3
8	29	112
More than 8	14	53
Totals:	420	1,062

The City of Helena utilizes three 20-cubic-yard rear-loading packer trucks to collect this waste. These vehicles are as follows:

Vehicle No.	Year Purchased	No. of Miles
206	1984	13,400
205	1982	30,900
207	1980	36,000

The oldest vehicle is now used as a standby, since only two vehicles are typically used each day. Vehicle 206 is primarily used to collect the wastes in the central and western parts of the city, including the downtown area. Vehicle 205 is used to collect the wastes in the eastern and northern portions of the city. The two routes overlap to a certain extent. This allows flexibility and adjustment between the two crews to allow for vehicle breakdowns and variations in waste volumes.

The commercial system basically utilizes five full-time employees to operate the packers and collect the waste. From Monday through Friday, two two-man crews operate, while on Saturday, one two-man crew operates the truck. The fifth employee is needed to replace other operators during the six-day work week as well as to fill in during sick leave and vacations. In a typical two-man crew, one individual drives and operates the truck while the other individual rides on the back and maneuvers and empties the containers. The driver also assists to dump larger containers. The crews are currently scheduled on an incentive basis. When the routes have been completed each day, the crews are free to go home. On a typical day, the two crews combined will service approximately 400 containers.

The City of Helena is responsible for providing the necessary containers to all accounts. As previously mentioned, these containers vary in size from one to eight cubic yards and are equipped with wheels and lids. According to local officials, approximately one-half of the containers are in fair to good shape. The remainder are in relatively poor shape and should either be repaired or replaced. The number of containers by size that the City has in use is as follows:

Size of Container (cubic yards)	Total Number of Containers in Use
1	20
2	185
3	180
4	10
6	5
8	50
Total:	450

B. New Front-Loading System

This option involves replacing the existing rear-loading system with a system that utilizes packer trucks equipped with a mechanized front-loading area. Implementation of this system would also require replacing the existing 450 containers that the City currently provides to users with new containers.

Unlike the existing rear-loading system, in which the packer trucks back up to the containers, the front-loading system is totally mechanized. The operator drives the packer truck directly up to a container and then operates the mechanized arm which lifts the container directly over the cab, dumps the refuse into the compactor unit, and then sets the container back on the ground. The operator then backs away from the container and drives to the next site.

There are several advantages and disadvantages of the front-loading compared to the rear-loading system. These include the following:

Advantages

1. The front-loading system requires a one-man crew compared to the two-man crew required by the existing rear-loading system. It would provide the same service, but at a reduced labor cost.

2. The containers for a front-loading system cost less than those for a rear-loading system.

3. The number of on-the-job accidents occurring are substantially less for front-loading than for rear-loading systems. This is due to the fact that the operator does not come into contact with the containers, but instead remains in the vehicle's cab.

4. The City landfill may be exhausted within approximately five years, and a new landfill site will have to be developed. It is probable that this new site will be substantially farther from the city than the current site. Because of the increased travel time that will be necessary, labor costs for collection crews to travel to the new landfill would be less for one-man front-loading crews than for two-man rear-loading crews.

Disadvantages

1. Front-loading packer trucks are more expensive than rear-loading packer trucks.

2. There may be restrictions on the use of a front-loading system for some situations. Such restrictions may include height and width limitations in certain alleys and container locations, traffic maneuverability problems due to the larger chassis on front-loading vehicles, and possible backing-up problems onto major streets due to the lack of a second person to watch for cars and pedestrians.

3. The 29 accounts located primarily in the downtown Gulch area that do not use containers but simply place their wastes at the curb could not be serviced by a front-loading system. The tramp truck would have to pick up these wastes.

C. Discontinuation of the City-operated Commercial Collection System

The third alternative evaluated for this study involves the elimination of the City of Helena's commercial collection service. If this alternative were implemented, the existing commercial customers would have to either retain a private refuse contractor to collect their wastes, or store and haul their wastes to the City landfill themselves. Several possible impacts and implications of this alternative were identified during this analysis. These impacts are summarized as follows:

1. If the commercial system were to be eliminated, the City's fixed costs would still be incurred. These costs are currently divided among the Sanitation Department's three cost centers (residential system, commercial system, and landfill operation) but would have to be absorbed by the residential and landfill cost centers. This would increase the rates for these services. To partially offset these increased costs on a short-term basis, the existing waste collection equipment could be sold. This would provide revenue, since this equipment has been paid off. The actual cost impact of this alternative is presented in the next section of this chapter.

2. Elimination of the City's commercial system could possibly increase collection rates for commercial accounts. This is due to the possible loss of the current competitive situation that exists between the City of Helena and City-County Sanitation Service.

   Under present State statutes (69-12-314), any private refuse hauler must possess a PSC Class D hauling permit. Local municipalities are exempt from this requirement. According to PSC personnel, there are three permits in effect for the City of Helena. However, only City-County Sanitation Service actively utilizes its permit. PSC regulations allow permits to be rescinded if they are not used. Therefore, under the current conditions it is possible that only one private firm may be available in the future to collect wastes in the City of Helena.

   This possibility was confirmed in recent discussions with PSC personnel. They felt that the possibility of issuing another permit for a contractor working in the City of Helena would be quite small, based on previous attempts and court cases in the state in which additional permits have been requested. In addition, although the PSC regulates the number of permits, it has no regulatory authority over the rates that refuse hauling firms can charge. Therefore, if the City of Helena eliminated its commercial collection system, there is a distinct possibility that only one private hauler would be available in the area.

3. There is another State statute (7-13-4107) that requires all municipalities to either give five years notice or purchase the equipment from existing contractors at fair market prices if a municipality decided to provide waste collection services. Therefore, if the City of Helena eliminated its existing waste collection service now and wanted to provide the service again in the future, these requirements would apply. This could ultimately be quite costly to the City.

4. The primary advantage of eliminating the commercial system is the reduction in manpower and management responsibility that would result. In addition, elimination of the commercial system could also reduce the impact of rising costs of industrial accident insurance, especially when the high rate paid for refuse collection is considered.

III. ECONOMIC COST ANALYSIS

A. Present Sanitation Department Budget

The initial step involved in developing an economic cost analysis for the three alternatives being evaluated was to review the existing City of Helena Sanitation Department's budget. This budget is broken down

according to three cost centers: residential, commercial, and landfill. For each cost center, the budget is divided into three primary costs: salaries and benefits, maintenance and operation, and capital equipment. Included in Table 3 is a summary of the 1986 budget for operating the City of Helena's Sanitation Department.

TABLE 3

1986 FISCAL BUDGET

CITY OF HELENA SANITATION DEPARTMENT

Item	Cost Center			Total
	Residential	Commercial	Landfill	
Salaries & Benefits	$106,550	$163,292	$85,681	$355,523
Maint. & Operation	103,243	107,307	90,722	301,272
Capital Outlay*	114,750	6,000	50,000	170,750
TOTAL:	$324,543	$276,599	$226,403	$827,545

* includes debt service principal

SOURCE: FY 1986 Sanitation Budget

After reviewing and discussing the budget with City officials, the following key points concerning this study were identified:

1. There are various fixed costs associated with the operation of the Sanitation Department that are shared between the three cost centers. These include: office and janitorial supplies, small tools, general postage, dues and subscriptions, advertising, utility and maintenance charges for the buildings, telephone, medical services, accounting and auditing, administrative charges, conferences and education, and insurance. In addition, the salary of the Department Foreman and one-third of the City's Environmental Engineer's salary are equally paid for by the three cost centers.

2. There is no depreciation included in the commercial cost center budget for vehicle and container purchase or replacement.

3. An analysis of the budget indicates that the commercial collection cost center represents approximately 34 percent ($276,599) of the total sanitation budget.

4. The operation, maintenance, and personnel costs for the three cost centers appear to be well documented and accurately distributed.

B. Cost Analysis of Alternatives

To evaluate the costs of the three alternatives identified herein, an annual cost analysis was developed. Five cost components were considered to obtain a total annual cost for each alternative. A brief description of each cost component is summarized herein.

1. Personnel

This cost component includes the necessary personnel to operate the commercial collection system for each alternative. For the rear-loading alternative, the existing budgeted cost was used. For the front-loading option, the existing budget less the cost of $2\frac{1}{2}$ employees was utilized. (Our analysis indicated that the front-loading system would reduce manpower needs by this amount.) For the third option in which the existing commercial system would be eliminated, personnel costs would still include one-third of the Department's foreman as well as one-ninth of the environmental engineer's salary.

2. Maintenance & Operation

For this cost component, maintenance and operation of the vehicles and containers as well as the fixed costs described previously to operate the Sanitation Department were considered. For the service elimination alternative (#3), it was assumed that the fixed costs currently being shared by the three cost centers would still have to be paid by the Department.

3. Depreciation

This cost component includes the amortization of the packer trucks and containers for the rear-loading and front-loading alternatives. A breakdown of the capital costs for each alternative are depicted on Table 4. The annual costs were developed using an amortization schedule of 10 percent annual interest for a ten-year period for the containers and a seven-year period for the packer trucks. The salvage value of the equipment and containers at the end of each amortization period was also included in the analysis.

TABLE 4

CITY OF HELENA COMMERCIAL COLLECTION SYSTEM

CAPITAL COSTS

Item	Rear-Loading System	Front-Loading System
Containers	$190,000	$152,000
Vehicles:		
2 new units	120,000	204,000
1 backup unit	22,000	40,000
TOTAL:	$332,000	$396,000

4. Tramp Truck

This cost component includes the commercial collection system's share of the costs associated with the tramp truck. Sanitation Department personnel indicated that the annual tramp truck budget is approximately $40,000, of which approximately ten percent is assessed to the commercial cost center under the rear-loading system. If the front-loading system were used, it is estimated that the tramp truck use would increase, primarily because the tramp truck would have to service the 29 existing commercial accounts that do not use containers. For the front-loading system, it is also anticipated that the tramp truck would have to pick up boxes, etc. that customers might set next to the containers. For these reasons, an additional $6,000 per year was included in the annual cost analysis for this cost component for the front-loading system.

5. Loss of Revenue

As previously discussed, it is anticipated that it may be impossible or hazardous to service some existing accounts with a front-loading system due to maneuvering and backing problems. Based on the joint evaluation of the Consultant and the City's Sanitation Foreman and Environmental Engineer, it was determined that approximately four percent of the accounts may not be serviceable with a front-loading system. In these cases it may be necessary to utilize the services of City-County Sanitation Service. The corresponding

lost revenue is reflected in the annual cost analysis. It should be noted that in many instances, it may be possible to relocate the container and thus retain the account. This would require the cooperation of the City and the customer. The loss of revenue projected herein is therefore probably high.

As an option to discontinuing service and losing these accounts, the City may want to retain one of the existing rear-loading packer trucks and approximately 30 containers. This would allow the City crews to maintain the service and consequently not lose the revenue. Since the existing packer trucks and containers have been paid for, the added expense to keep these would most likely not exceed the lost revenue that otherwise would be incurred.

Summarized in Table 5 is the breakdown of the total annual costs for each of the three alternatives considered. As indicated in this table, the estimated cost for the front-loading system is approximately $50,000 less than the rear-loading system when all factors are taken into account. As shown, it is estimated that if the City were to discontinue commercial collection service, fixed costs of approximately $59,000 would have to be absorbed by the remaining two cost centers. This would raise rates for residential collection and landfilling costs by approximately ten percent per year. It should be noted, however, that if the elimination option were implemented, the existing rear-loading packer trucks and containers could be sold for approximately $126,000 (see Table 6). This revenue could then be used to offset the fixed costs for approximately two years before rate increases would be necessary.

TABLE 5

CITY OF HELENA COMMERCIAL COLLECTION SYSTEM

ANNUAL COST

Item	Alternative		
	Rear-Loading	Front-Loading	Elimination of Service
Personnel	$160,000	$100,000	$17,000
Maint. & Operation	111,000	97,000	38,000
Depreciation:			
Vehicles	21,000	34,000	-0-
Containers	28,000	22,000	-0-
Tramp Truck	4,000	10,000	4,000
Loss of Revenue (compared to R.L. System)	-0-	11,000	N/A
TOTAL:	$324,000	$274,000	$59,000

TABLE 6

HELENA COMMERCIAL COLLECTION SYSTEM

SALVAGE VALUE OF EXISTING REAR-LOADING SYSTEM

Item	Salvage Value
Containers	$37,000
Vehicles	89,000
TOTAL:	$126,000

PART FOUR

RECOMMENDATIONS

PART FOUR

RECOMMENDATIONS

I. GENERAL SUMMARY

It has been pointed out within the text of this report that several advantages and disadvantages exist for each of the three commercial collection alternatives evaluated herein. A summary of the alternatives is given below:

A. Continuation of Existing Rear-Loading System

The primary advantage of maintaining the existing system is that the trucks and containers are paid for and in service. The system has also been in operation for many years and so personnel are familiar with the system and routes. No additional training or "debugging" is necessary as would be required by a new system.

In addition, if the existing system is retained, City officials would not have to reduce $2\frac{1}{2}$ employees from the existing collection system staff.

Finally, the City would not lose any accounts or have to reposition or relocate containers such as may be necessary with a front-loading system.

B. Implementation of New Front-Loading System

The primary advantage of implementing a new front-loading system is the estimated $50,000 per year in savings compared to the existing rear-loading system. As labor costs increase, the savings over the existing system should increase further since the rear-loading system is approximately twice as labor-intensive as the front-loading system. The front-loading system could also be more economical in the future when a new landfill must be located due to reduced travel time costs for the smaller crews required.

C. Elimination of Commercial Collection System

The primary advantage of eliminating the commercial collection system is the reduction in manpower, insurance, and management responsibilities that would result. These advantages, however, are offset by the possibility of a monopoly situation resulting from the current permit situation and PSC regulations. This could result in higher collection costs for commercial accounts in the City. As also indicated in the text of this report, the City would have to raise the residential collection and

landfilling rates by approximately 10 percent to offset the fixed costs that would have to be absorbed if the commercial collection service were eliminated.

II. RECOMMENDATIONS

Based on the analysis conducted for this report, the Consultant hereby makes the following recommendations:

A. The City of Helena should replace the existing commercial rear-loading system with a new front-loading system because of significant life-cycle cost savings.

B. Once the new system has been placed into operation and is operating smoothly, the City should sell or trade-in the existing packer trucks and containers. The City may want to consider, however, keeping one of the rear-loading packer trucks and approximately 30 existing containers to serve the few existing accounts (4% of total revenue) that cannot be converted to the front-loading system due to physical or traffic constraints. This option compared to discontinuing service to these accounts should be evaluated in more detail during the start-up phase of the new system.

C. Once the new system has been placed into operation, the City should conduct a detailed rate analysis to review and modify, where necessary, the commercial collection rate structure.

D. The City of Helena should develop a staffing plan to handle the anticipated reduction in manpower needs as a result of implementing a front-loading commercial system. The City should make the necessary manpower reductions through attrition if at all possible.

E. Due to the PSC hauling permit statutes and potential monopoly situations, the City should not consider eliminating the commercial collection service at this time.

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